



Our ref: KOY-30

Client's ref: FO999-US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re Application of: N. GOTO :

Serial No. : 10/806,841 :

Group : 1752

Filed : March 23, 2004 :

Examiner: T. Chea

Title : Photothermographic :
Image Material

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DECLARATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

S i r:

I, Narito Goto, hereby declare and say as follows:

1. I am a named Inventor of the above-identified Application.

2. I was awarded a Master's Degree in Chemistry in 1979 from Tokyo University. Since my graduation in 1979, I have been employed by Konica Corporation, now changed to Konica Minolta Holdings, Inc. Throughout my employment at Konica, I have been engaged in the research and study of photosensitive materials.

3. It has come to my attention that the Examiner has rejected the claims in this Application based on a combination of Biavasco (USP 5,330,864), Fukui (USP 2002/0102502) and Cerquone (USP 4,021,240). I note that the Examiner has stated that Biavasco teaches photothermographic materials of the present Invention except for the presence of the reducing agent of formula I and the yellow coloring leuco dye of formula YA. The Examiner has pointed to Fukui to teach both the reducing agent of formula 1 and the yellow coloring leuco dye of YA. I have read both Biavasco and Fukui and note that Fukui also teaches photothermographic material having an organic silver salt, a silver halide, a binder as well as a reducing agent. Reducing agent of formula I of Fukui overlaps the reducing agent of formula 1 of this Application while the compound of formula II of Fukui overlaps the

yellow leuco dye of formula YA of the present Invention. In order to demonstrate that the combination of a reducing agent of formula 1, a yellow coloring leuco dye of formula YA and a cyan leuco dye produces superior and unexpected results compared to the teaching of Fukui and Biavasco, tests have been run using photothermographic materials taught in Fukui by themselves and a photothermographic material is made in accordance with Fukui and containing a cyan leuco dye as taught in Biavasco. These tests are reported below and were performed by me or under my direct supervision and control.

4. I prepared five materials in accordance with Fukui. Specifically, I prepared the following Samples.

Sample 1 of example 1 in Table 1 of Fukui and labeled herein Comparison 1-1;

Sample 3 of example 1 in Table 1 of Fukui, herein labeled Comparison 1-3;

Sample 1 of example 2 in Table 2 of Fukui, herein

labeled Comparison 2-1;

Sample 3 of example 2 in Table 2 of Fukui, herein labeled Comparison 2-3; and

Sample 5 of example 2 of Table 2 of Fukui, herein labeled Comparison 2-5.

It will be noted that Samples 1 and 2 of example 1 of Fukui contained a reducing agent of formula (1-1) recited on page 3 of Fukui and that this corresponds to reducing agents 2-1 on page 61 of this Application. Samples 1, 3 and 5 of example 2 of Fukui contain a reducing agent of formula 1-4 of Fukui as recited on page 3 of Fukui. A reducing agent of formula (1-4) of Fukui corresponds to reducing agent of formula 1-1 of the present Invention as recited on page 59 of this Application. All five Samples of Fukui contained yellow coloring leuco dye of formula (2-3) as recited on page 6 of Fukui and this corresponds to formula YA-1 on page 103 of this Application.

5. In order to compare the Comparison Samples referred to above, each one of these Samples was prepared a second time except that a cyan leuco dye in accordance with Biavasco was added to the emulsion layer coating solution during preparation. The specific cyan leuco dye that was employed was compound (2) shown in Column 7 of Biavasco. The specific amount of compound (2) added is shown in the Tables attached hereto. It will be noted that each one of these Samples that correspond to the material of Fukui were labeled as "Sample". In other words, Sample 1-1 corresponds to Comparison 1-1.

6. All ten photothermographic material was then exposed and developed in accordance with this Application as taught on page 185-186 and evaluated in accordance with this Application for image density, silver color tone, and image storage stability for light irradiation as taught in accordance with this Application on pages 186-188.

7. As can be seen in the attached Tables, Sample 1-1 and Sample 1-3 are superior to Comparison 1-1 and 1-3 in image density and silver color tone.

8. It can also be seen from the attached Tables that Samples 2-1, 2-3, and 2-5 are superior to Comparison 2-1, 2-3 and 2-5 in image density, silver color tone and image storage stability for light irradiation.

9. I find the superior results which are reported in the attached Tables to be unexpected. I further believe that one of skill in the art would not expect these superior properties as reported in the attached Tables.

It is declared by undersigned that all statements made herein of undersigned's own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under

section 1001 of Title 18 of the U.S. Code; and that such willful false statements may jeopardize the validity of this Application or any patent issuing thereon.

Narito Goto
Narito Goto

Dated: This 26th day of August , 2005.

DCL/mr

Encl: Tables 1 and 2

Table 1

Sample No.	Compound of formula (I) = α		Compound of formula (II) or (III) = B		Cyan leuco dye = C		Molar ratio		Molar ratio		Hetero-aromatic mercapto compound
	Type	Amount (mol/mol-Ag)	Type	Amount (mol/mol-Ag)	Type	Amount (mol/mol-Ag)	B/ α	C/ α	Type	Amount (mol/mol-Ag)	
Comparison 1-1	(1-1)	4×10^{-1}	(2-3)	8×10^{-3}	None	None	0.02	0.02	Mercapto-1	1×10^{-2}	
Comparison 1-3	(1-1)	4×10^{-1}	(2-3)	1.6×10^{-2}	None	None	0.04	0.04	Mercapto-1	1×10^{-2}	
Sample 1-1	(1-1)	4×10^{-1}	(2-3)	8×10^{-3}	(2)	8×10^{-3}	0.02	0.02	Mercapto-1	1×10^{-2}	
Sample 1-3	(1-1)	4×10^{-1}	(2-3)	1.6×10^{-2}	(2)	1.6×10^{-2}	0.04	0.04	Mercapto-1	1×10^{-2}	

Sample No.	IMAGE SILVER IMAGE STORAGE		STABILITY FOR	
	DENSITY	COLOR TONE	LIGHT IRRADIATION	
Comparison 1-1	3.3	2.0		2.5
Comparison 1-3	3.3	2.5		2.5
Sample 1-1	3.4	3.0		2.5
Sample 1-3	3.4	3.0		2.5

Table 2

Sample No.	Compound of formula (I) = α		Compound of formula (II) or (III) = B		Cyan leuco dye = C		Molar ratio		Molar ratio		Hetero-aromatic mercapto compound	
	Type	Amount (mol/mol-Ag)	Type	Amount (mol/mol-Ag)	Type	Amount (mol/mol-Ag)	B/ α	C/ α	Type	Amount (mol/mol-Ag)		
Comparison 2-1	(1-4)	4 x 10 ⁻¹	(2-3)	8 x 10 ⁻³	None	None	0.02	0.02	Mercapto-1	1 x 10 ⁻²		
Comparison 2-3	(1-4)	4 x 10 ⁻¹	(2-3)	1.6 x 10 ⁻²	None	None	0.04	0.04	Mercapto-1	1 x 10 ⁻²		
Comparison 2-5	(1-4)	4 x 10 ⁻¹	(2-3)	8 x 10 ⁻³	None	None	0.02	0.02	Mercapto-1	3 x 10 ⁻²		
Sample 2-1	(1-4)	4 x 10 ⁻¹	(2-3)	8 x 10 ⁻³	(2)	8 x 10 ⁻³	0.02	0.02	Mercapto-1	1 x 10 ⁻²		
Sample 2-3	(1-4)	4 x 10 ⁻¹	(2-3)	1.6 x 10 ⁻²	(2)	1.6 x 10 ⁻²	0.04	0.04	Mercapto-1	1 x 10 ⁻²		
Sample 2-5	(1-4)	4 x 10 ⁻¹	(2-3)	8 x 10 ⁻³	(2)	8 x 10 ⁻³	0.02	0.02	Mercapto-1	3 x 10 ⁻²		

Sample No.	IMAGE STABILITY FOR		SILVER COLOR		IMAGE STABILITY FOR	
	DENSITY	TONES	TONES	IRRADIATION	TONES	IRRADIATION
Comparison 2-1	3.8	2.0	2.0	3.5	5.0	5.0
Comparison 2-3	3.9	2.0	2.0	3.5	5.0	5.0
Comparison 2-5	3.8	1.5	1.5	3.0	5.0	5.0
Sample 2-1	4.1	5.0	5.0	5.0	5.0	5.0
Sample 2-3	4.2	5.0	5.0	5.0	5.0	5.0
Sample 2-5	4.1	5.0	5.0	5.0	5.0	5.0